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AMENDMENT AND RESPONSE UNDER 37 CFR § L311

Serial Number: 09/964.586
Elling Date: Suntamber 28, 20

Filing Date: September 28, 2001

Title: PACKAĞE STIFFENER (As Amended)

IN THE CLAIMS

Please amend the claims as follows:

- 1. (Cancelled)
- 2. (Previously Presented) An IC package as claimed in claim 78, wherein the package stiffener includes a copper ring split into power and ground portions, and insulating couplers electrically isolating the power and ground portions of the split copper ring.
- 3. (Previously Presented) An IC package as claimed in claim 2, wherein the split copper ring mounts on the substrate via a solder with a low resistance path to deliver large amounts of current to the substrate and remove heat from the substrate.
 - 4-6. (Cancelled)
- 7. (Previously Presented) An IC package as claimed in claim 78, wherein the package stiffener includes one of electrically conductive, insulating, and intermingled electrically conductive and insulating sections, and one of a molded, stamped, etched, extruded and deposited frame, wherein the stiffener is to withstand temperatures of at least normal IC operation.
- 8. (Previously Presented) An IC package as claimed in claim 2, further comprising a heat spreader plate bonded to the split copper ring by epoxy and to the die by thermal interface material.
- (Previously Presented) An IC package as claimed in claim 78, wherein the package stiffener is to support at least partially a heat sink.

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Title: PACKAGE STIFFENER (As Amended)

10-64. (Canceled)

65. (Previously Presented) An integrated circuit (IC) package as claimed in claim 84

wherein the frame extends along at least two side edges of the substrate.

66. (Previously Presented) An integrated circuit (IC) package as claimed in claim 84

wherein the frame is positioned at two separate sections on the substrate.

67. (Previously Presented) An integrated circuit (IC) package as claimed in claim 84

wherein the frame is positioned at separate corner edges of the substrate.

68. (Previously Presented) An integrated circuit (IC) package as claimed in claim 84

wherein the frame includes a ring that extends along the perimeter of the substrate.

69. (Previously Presented) An integrated circuit (IC) package as claimed in claim 68

wherein the frame has rounded corners.

70. (Previously Presented) An integrated circuit (IC) package as claimed in claim 84

wherein the frame and the substrate have similar coefficients of thermal expansion.

71. (Previously Presented) An integrated circuit (IC) package as claimed in claim 84

wherein the frame has a ground side portion and a power side portion.

72. (Previously Presented) An integrated circuit (IC) package as claimed in claim 71

wherein the ground side portion and the power side portion are separated by insulating couplers.

73. (Previously Presented) An integrated circuit (IC) package as claimed in claim 72

wherein the insulating couplers aid in the structural integrity of the frame.

Title: PACKA(H: STHFENER (As Amended)

- 74. (Previously Presented) An integrated circuit (IC) package as claimed in claim 84 further comprising a spreader plate that couples the frame and the die, wherein the frame and the die are between the spreader plate and the substrate.
- 75. (Previously Presented) An integrated circuit (IC) package as claimed in claim 74 wherein the spreader plate and the frame are integral.
 - 76. (Currently Amended) An integrated circuit (IC) package comprising: a substrate having a die-side, wherein a die is disposed upon the die-side of the substrate; a power pod supplying power to the die; and

a package stiffener disposed upon the die-side of the substrate <u>directly and not upon an</u> <u>interposer</u>, and spaced from the die to deliver low-inductance current to the die, via the substrate <u>directly and not via the interposer</u>, while concurrently providing stiffening support to the substrate, wherein the package stiffener electrically couples the power pod and the substrate and includes a capacitor.

- 77. (Cancelled)
- 78. (Currently Amended) An integrated circuit (IC) package comprising: a substrate supporting at least a die; and

a package stiffener mounted at a perimeter of the substrate <u>directly and not upon an interposer</u>, and arranged apart from the die on the substrate to deliver low-inductance current to the die, via the substrate <u>directly and not via the interposer</u>, while concurrently providing stiffening support to the substrate, wherein the package stiffener includes a capacitor.

79. (Currently Amended) An integrated circuit (IC) package as claimed in claim 78 wherein the <u>package stiffener includes a capacitor that</u> includes an insulator.

80-83. (Cancelled)

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84. (Currently Amended) An integrated circuit (IC) package comprising:
a substrate having a die-side, wherein a die is disposed upon the die-side of the substrate;
and

a frame disposed upon the die-side of the substrate <u>directly and not upon an interposer</u>, and spaced from the die to deliver low-inductance current to the die, via the substrate <u>directly</u> and not via the interposer, while concurrently providing stiffening support to the substrate; wherein-the frame includes a capacitor.

85. (Currently Amended) An integrated circuit (IC) package as claimed in claim 84 wherein the <u>frame includes a capacitor that</u> includes an insulator.

86-88. (Cancelled)

- 89. (Previously Presented) An integrated circuit (IC) package as claimed in claim 76 further comprising a plurality of power pods supplying power to the die.
 - 90. (Canceled)
- 91. (Currently Amended) An integrated circuit (IC) package as claimed in claim 76 wherein the <u>package stiffener includes a capacitor that</u> includes an insulator.
- 92. (New) An integrated circuit (IC) package as claimed in claim 78 wherein the package stiffener includes a capacitor.